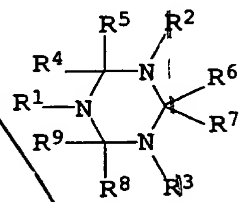
We claim

1. An oligomerization catalyst for olefins, obtainable from

a) a chromium compound CrX_3 and the at least equimolar amount, based on the chromium compound CrX_3, of a ligand L or from an existing chromium complex CrX_3L, in which the groups X are, independently of one another, abstractable counterions and L is a 1,3,5-triazacyclohexane of the formula I



I

where the groups R^1 to R^9 are, independently of one another: hydrogen or organosilicon or substituted or unsubstituted carboorganic groups having from 1 to 30 carbon atoms, where two geminal or vicinal radicals R^1 to R^9 may also be joined to form a five- or six-membered ring, and

b) at least one activating additive from the group:

i) an unsubstituted or substituted five-membered aromatic N-heterocycle and at least one aluminum alkyl, some of whose alkyl groups may have been replaced by halogen and/or alkoxy,

ii) an alkylalumoxane.

2. An oligomerization catalyst as claimed in claim 1, wherein the groups R^1, R^2 and R^3 in the 1,3,5-triazacyclohexane I are, independently of one another, substituted or unsubstituted C_1-C_{12}-alkyl, C_6-C_{15}-aryl or C_7-C_8-arylalkyl.

3. An oligomerization catalyst as claimed in claim 1, wherein the groups R^1, R^2 and R^3 in the 1,3,5-triazacyclohexane I are, independently of one another, substituted or unsubstituted C_1-C_{12}-alkyl or C_7-C_8-arylalkyl.

A1 >

4. An oligomerization catalyst as claimed in any of claims 1 to 3, wherein the groups R^4, R^5, R^6, R^7, R^8 and R^9 in the 1,3,5-triazacyclohexane I are, independently of one another, hydrogen or methyl.

5. [(1,3,5-Tris(2-n-propylheptyl)-1,3,5-triazacyclohexane)$CrCl_3$]

6. [(1,3,5-Tris(2-ethylhexyl)-1,3,5-triazacyclohexane)$CrCl_3$]

A2 >

7. A process for preparing oligomers having up to 30 carbon atoms by reaction of an olefin or a mixture of olefins at from 0 to 150°C and pressures of from 1 to 200 bar in the presence of an oligomerization catalyst as claimed in any of claims 1 to 6.

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